Does disclosure of materiality in the audit report reduce the audit expectation gap?

Abstract

Previous research indicates that materiality judgments differ between auditors and financial statement users. As a component of the audit expectation gap (AEG), the persistence of the materiality gap negatively impacts the perceived value of the audit report. We conducted an experiment to examine whether providing a more detailed disclosure of materiality in the audit report affects two dimensions of AEG: auditor responsibility and the reliability of financial statements. Given that the audit report serves as an information tool, we also explored whether users' decision-making styles moderate these effects.

The findings reveal that expanded materiality disclosure reduces the expectation gap concerning auditor responsibility, particularly in areas such as fraud prevention and detection, as well as the definition of accounting policies and estimates. However, no significant relationship was found between materiality disclosure and the perceived reliability of financial statements, suggesting that users may not fully understand the inverse relationship between materiality and audit effort. Additionally, decision-making style did not influence the impact of materiality disclosure on AEG, indicating that users do not perceive materiality judgments as complex enough to elicit differences in cognitive processing between rational and intuitive individuals. These results contribute to the ongoing discussion on how audit report enhancements affect AEG.

JEL codes: D81, M41, M42

Keywords: audit expectation gap, audit report, materiality disclosure, decision-making styles

1. Introduction

Auditing serves a public interest function by mitigating the information risk associated with entities' financial reporting. As a result, this social role of auditing generates benefits—referred to as audit value—that influence the decisions of a wide range of users, as demonstrated by various studies (e.g., Asare & Wright, 2012; Coram et al., 2011; Christensen et al., 2014). However, auditing is considered a credence good (Causholli & Knechel, 2012), meaning that both the audit process and its outcomes are not directly observable by users. Consequently, van Brenk et al. (2022) suggest that this characteristic may contribute to an expectation gap. The audit expectation gap (AEG) represents the divergence between the public's expectations regarding an auditor's performance in an audit and their perception of what is actually delivered (Porter, 1993, 2014). AEG undermines the perceived value of the audit report and is therefore a critical issue for the auditing profession. Its existence can erode user confidence in audit reports (Jayasena et al., 2019). Thus, narrowing the AEG can serve as a key mechanism to enhance stakeholder trust in auditors' work (Akther & Xu, 2020) while also strengthening both the reputation and financial success of the auditing profession (Lee et al., 2009).

The AEG is a longstanding and complex issue that has persisted for many years (Quick, 2020) and continues to shape the auditing profession (Fotoh & Lorentzon, 2023). One key factor contributing to AEG is the materiality gap, which reflects the divergence in perceptions of materiality between auditors and financial statement users (Boterenbrood, 2017). According to International Standard on Auditing (ISA) 320, materiality is a matter of professional judgment exercised by auditors in planning and performing the audit, evaluating the impact of identified misstatements, and forming the audit opinion. In making this judgment, auditors are expected to consider the needs of financial statement users. However, given its subjective nature, several studies (e.g. DeZoot et al., 2019; CEAOB, 2022) have identified differences in how materiality is assessed by auditors versus users. Moreover, the lack of explicit disclosure regarding the application of materiality in audit reports prevents users from fully understanding how auditors make these judgments and whether their assessments align with user expectations. This issue is particularly significant because higher materiality thresholds are linked to lower audit quality, as founded by Zhu et al. (2024). Since materiality is not clearly discernible in audit reports, and even a thorough review of auditing standards offers only a diffuse response (Asare & Wright, 2012), users may struggle to assess audit quality. Given that

users lack direct means to evaluate audit quality (Lee et al., 2009), their criticisms of auditors' work may sometimes be unwarranted, as they benefit from hindsight when assessing past audit decisions (Humphrey et al., 1992).

The defensive approach has been identified as one of the key strategies for addressing the AEG by enhancing communication between auditors and users through a more detailed audit report (Humphrey et al., 1992; Lee et al., 2009; Quick, 2020; Deepal & Jayamaha, 2022). The audit report serves is the primary instrument of communication between auditors and users of audited financial statements (Bédard et al., 2016; Quick, 2020). While Vanstraelen et al. (2012) highlight that users are mainly interested in audit findings, Litjens et al. (2015) and Mock et al. (2013) argue that users also seek greater insight into the audit process, including how materiality is applied. Therefore, including materiality information in the audit report can help to narrow the information gap (DeZoort et al., 2019), by enabling users to evaluate the potential noise and bias in the financial statements (Manson & Zaman, 2001; Messier et al., 2005; Ruhnke et al., 2018). In response, some countries (UK in 2013, Netherlands in 2014, and China in 2021) have introduced mandatory materiality disclosures in audit reports for certain entities, such as listed companies, aiming to enhance the informativeness of audit report.

This study aims to examine the impact of materiality disclosure on AEG, with two key objectives: (i) to assess how the disclosure of both quantitative and qualitative aspects of the auditor's materiality judgment influences the AEG, and (ii) to determine whether the decision-making style of financial statement users moderates the relationship between materiality disclosure and the AEG. To achieve this, we conducted an experimental study using a 2 × 1 between-subjects design, where we manipulated the presence or absence of materiality disclosure in the audit report while also considering participants' rational and intuitive decision-making styles. The AEG was assessed based on two dimensions: the perception of auditor responsibility and reliability of financial statements.

The motivation for this study is fourfold. First, the literature is rich in research exploring the factors contributing to the AEG. One avenue of research is the impact of audit report structure, content, and wording on the AEG (Chong & Pflugrath, 2008; Asare & Wright, 2012; Gold et al., 2012; Coram & Wang, 2021). While Coram and Wang (2021) suggest that changes in audit report formats over time have had limited effects on narrowing the AEG, Boterenbrood (2017) highlights that materiality – one of the components of the AEG – remains underexplored in academic literature. Christensen et al. (2020) emphasize the lack of research on the effects of materiality disclosure on users. As a topic for future

research (Quick et al., 2023), Mock et al. (2013) call for more experimental studies to address this concern. a gap further emphasized by Mock et al. (2013), who call for more experimental studies to explore this issue further. Boterenbrood (2017) also raises the question of whether greater transparency in materiality disclosures could foster consensus on materiality assessments, thereby helping to reduce the AEG by improving communication between auditors and financial statement users. This study aligns with the research avenues proposed by these scholars, focusing on materiality – one of the core concepts of the audit process (Houghton et al., 2011).

Secondly, Turner et al. (2010) and Mock et al. (2013) propose that disclosing materiality could be an effective strategy for reducing the AEG. However, Gray et al. (2011) recognize that this measure comes with both costs and benefits, making it a non-consensual approach. They therefore suggest that future research should focus on behavioral changes within different stakeholder groups. Given that the AEG can damage the legitimacy of auditing in society (Ruhnke & Schmidt, 2014), exploring measures to mitigate it is crucial. Additionally, examining potential changes to the audit report could generate valuable insights for the auditing profession (Gray et al., 2011). The impact of expanding the audit report on audit quality, its informational value, and the AEG remains a controversial topic, as reflected in numerous studies (e.g., Houghton et al., 2011; Bédard et al., 2016; Gutierrez et al., 2018; Reid et al., 2019; Eilifsen et al., 2021; Minutti-Meza, 2021; Dwyer et al., 2023; Elsayed et al., 2023; Gutierrez et al., 2025). Since the AEG is still an underexplored area (Hay, 2020), further research on the public disclosure of materiality contributes to the ongoing debate on the costs and benefits of initiatives aimed at reducing the AEG. As Porter (2014, p.51) highlights, auditors need *to restrain society's expectations of them to those that it is cost-beneficial for them to perform, to accept responsibilities which meet the cost–benefit criterion as rightfully theirs, and to perform these responsibilities to the high standard society expects*. In this context, the academic and practical relevance of this study lies in analyzing the impact of a measure designed to enhance confidence in the work performed by auditors.

Thirdly, Quick (2020) emphasizes the need for more research on AEG in continental European countries and advocates for the use of experimental research approaches. Indeed, AEG is not a static phenomenon and requires continuous attention (Hay, 2020), particularly through expanding its analysis to different contexts (Gray et al., 2011; Hay, 2020). Astolfi (2021) highlights that AEG is shaped by social and historical factors, meaning its existence is influenced by local cultural and institutional contexts. Similarly,

Deepal and Jayamaha (2022) caution that global conclusions about AEG cannot be automatically applied to a specific country without conducting targeted research. In the Portuguese context, Almeida and Colomina (2008) found that users perceive the traditional audit report model as insufficient for understanding both the objectives of an audit and the work performed to reach conclusions. Following the implementation of Directive 2014/56/EU by the European Parliament and Council on April 16, Portuguese auditors adopted international auditing standards, which require disclosing only a simplified version of the materiality judgment, as outlined in ISA 700. Given this, my study examines AEG in a context that has been relatively underexplored (see Quick, 2020; Deepal & Jayamaha, 2022; Çeltikci, 2024). As a result, our findings may contribute to a broader and more nuanced understanding of AEG.

Fourthly, the informational value of the audit report depends on its relevance to users' decision-making processes. Coram et al. (2011) suggest that future research should investigate whether modifications to the format and content of the audit report influence user decision-making, preferably through experimental studies. This study incorporates rational and intuitive decision-making styles (Scott & Bruce, 1995). These styles represent different approaches to processing information: the rational style involves memory recall, extensive research, and logical evaluation of alternatives, whereas the intuitive style relies on hunches and sensations and does not require deliberate memory effort (Evans & Stanovich, 2013; Scott & Bruce, 1995). The moderating effect of decision-making or cognitive styles has been analyzed in auditing research (e.g. Cao et al., 2022). This work is innovative in including the decision-making style in the relationship between materiality disclosure and AEG.

The remainder of this paper is organized as follows. The next section presents the literature review, discussing key concepts such as materiality and AEG, along with the rationale behind the two research hypotheses examined. The third section outlines the experimental design, detailing the task structure and variable measurement. The fourth section reports the empirical findings, and finally, the fifth section offers concluding remarks.

2. Background and hypotheses development

2.1. Materiality in the audit standards field

This study is conducted with potential users of Portuguese financial statements operating in Portugal. Therefore, we provide a brief overview of the applicable auditing standards, including the International Standards on Auditing (ISAs) and other technical guidelines issued by the Portuguese Institute of Statutory Auditors. According to ISAs 200 and 320, information is considered materially relevant if its misstatement could reasonably be expected to influence users' economic decisions based on the financial statements. When assessing materiality, ISAs 320 and 450 recommend that auditors evaluate the significance of a misstatement both individually and in aggregate, considering the specific circumstances of the audited entity. As a result, the auditor's materiality judgment must take into account two key elements: i) the auditor's perception of the financial information needs of financial statement users; ii) the misstatement itself, assessed based on its size, nature, or the interaction of both. The first element presents an immediate challenge for auditors – identifying the relevant users of the financial statements and understanding their information needs. To address this, ISA 320 states that auditors should consider the common financial information needs of users as a group, rather than focusing on a specific individual user.

The second element highlights the quantitative and qualitative aspects of materiality. The quantitative component refers to the threshold at which misstatements, whether individually or in aggregate, are considered material. This threshold is determined by applying a percentage to a chosen benchmark, both of which are selected by the auditor. While ISA 320 provides examples of possible benchmarks and circumstances, it does not prescribe specific values, leaving auditors with considerable discretion in defining these parameters. Research by Eilifsen and Messier (2015), Choudhary et al. (2019), Dwyer et al. (2023) and Quick et al. (2023) confirms that audit firms exhibit variability in selecting benchmarks, determining appropriate percentages, and establishing percentage ranges to apply. On the qualitative side, ISAs 320 and 450 emphasize that even if uncorrected misstatements do not surpass the materiality threshold, their nature and the circumstances in which they occur may still render them significant to users.

Auditing standards outline additional key requirements that deserve attention. Firstly, ISA 320 states that materiality is applied throughout the entire audit process, from planning and performing of the audit, to assessing identified misstatements and forming the audit

opinion. This stresses materiality as a fundamental concept, requiring auditors to integrate it across different audit phases while considering two other critical elements: audit risk and audit evidence. Secondly, ISA 320 specifies that auditors determine materiality for the financial statements as a whole, though in some cases, they may establish a lower materiality level for specific transaction classes, balances, or disclosures, if deemed relevant to users' decision-making. Thirdly, ISAs 300 and 320 require that materiality should be set during the audit planning phase. However, ISA 320 allows for reassessment if new information arises, particularly in the context of detected and uncorrected misstatements (ISA 450). Fourthly, material misstatements can also pertain to qualitative disclosures (ISAs 315 and 320), recognizing that financial statements contain textual information that is critical to users (e.g., accounting policies, liquidity, and debt covenants of an entity facing financial distress). Fifthly, ISA 260 requires auditors to communicate materiality-related matters to those charged with governance as part of the planned audit scope. Additionally, for public interest entities, auditors must report to the Audit Committee, detailing the quantitative materiality level applied and the qualitative factors considered in its determination – Article 11(h) of Regulation (EU) No. 537/2014 (UE, 2014). Lastly, ISA 700 requires that the audit report includes a statement on materiality in the auditor's responsibilities section, offering two options: i) misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements (simplified version); or ii) a detailed definition of materiality aligned with the applicable financial reporting framework. In Portugal, the simplified version has been adopted, as incorporated into audit report templates outlined in Technical Application Guide No. 1 (OROC, 2025).

The elements of materiality discussed throughout this section share a common trait: they are all determined based on the auditor's professional judgment. The literature is rich with studies highlighting that materiality judgment is influenced by multiple factors, including the industry of the audited entity (Popa et al., 2013), the entity's size (Blokdijk et al., 2003), the auditor's experience (Carpenter & Dirsmith, 1992), industry-specific knowledge (Popa et al., 2013), the financial condition of the entity (Imoniana et al., 2023), engagement risk, and the pressure to satisfy key clients (Christensen et al., 2022), among others. As a result, these contextual factors may cause discrepancies between the auditor's assessment of materiality and users' perceptions. A piece of information that an auditor deems immaterial may be perceived as highly relevant by users (Houghton et al., 2011).

These divergences trigger the materiality gap, that is, *the gap in perceptions of materiality for financial statements as a whole between auditors, preparers and users* (Boterenbrood, 2017, p. 1124).

2.2. The audit expectation gap

ISA 200 states that the primary objective of an audit is to allow the auditor to express an opinion on whether the financial statements have been prepared, in all material respects, in accordance with the applicable financial reporting framework, and to obtain reasonable assurance that the financial statements are free from material misstatement. However, the audit's purpose is not always as clear to financial statement users as it is to auditors (Masoud, 2017). Society often expects more from auditors than what they are actually required or able to deliver and frequently lacks awareness of the role, responsibilities, and limitations of the audit function (Porter, 2014). This misalignment of expectations leads to an expectation gap, where users hold different perceptions of what an auditor should do versus what an auditor is actually responsible for or capable of doing (Hay, 2020).

The AEG is a complex phenomenon (Quick, 2020), with the literature offering various perspectives to explain and define it (Deepal & Jayamaha, 2022). Traditionally, AEG is described as the gap in perceptions between society and auditors regarding the auditor's responsibilities (Porter, 2014), leading to users having higher expectations of the audited financial report than what an auditor can reasonably be expected to accomplish (Quick, 2020). Acknowledging that auditors' performance may sometimes fall short, Porter (1993) introduced the term audit expectation-performance gap to describe the gap between society's expectations of the auditor and the audited financial statements, and how auditors' performance is perceived. Similarly, Ruhnke and Schmidt (2014) define AEG as the difference between what society expects from auditors in their statutory roles and responsibilities and how auditors' actual performance is perceived. The IAASB (2011), on the other hand, describes AEG as the divergence between users' expectations of an audit and audited financial statements, compared to what an audit is actually expected to achieve under the standards. Most of the definitions found in the literature align with Porter's (1993) conceptualization (Deepal & Jayamaha, 2022), which closely resembles the perspective of Ruhnke and Schmidt (2014).

The expectations gap arises from the combination of three components (Porter, 1993, 2014): i) reasonableness gap – the discrepancy between what society expects auditors to do and what is realistically reasonable for auditors to perform; ii) deficient standards gap

– the mismatch between the responsibilities defined in auditing standards and those that could reasonably be expected of an auditor; and iii) deficient performance gap – the difference between the expected performance based on existing standards and the actual performance of auditors as perceived by society. Porter (1993; 2014) grouped the deficient standards gap and the deficient performance gap into the performance gap, representing the difference between what society can reasonably expect from auditors' work and how their actual performance is perceived. In terms of importance, Quick (2020) highlights the reasonableness gap and the deficient performance gap as the main contributors to AEG.

Similarly, Ruhnke and Schmidt (2014) break AEG into three components: i) failure of the public – the gap between public expectations of auditors' responsibilities and what is actually prescribed by auditing standards; ii) standard-setter gap – which includes the deficient standards gap and the failure to clearly and effectively communicate auditor responsibilities; and, iii) failure of the auditor – the disparity between an auditor's own perception of their responsibilities and the requirements set by auditing standards.

Building on the IAASB (2011) definition of AEG, Mock et al. (2013) identify two key dimensions: i) communication gap – the difference between what auditors communicate and what users expect and understand from those communications; and, ii) information gap – the divergence between the information users need for decision-making and what is actually provided in financial statements, audit reports, and other sources (IAASB, 2011; Mock et al., 2013).

The AEG can damage the social role of auditing (Ruhnke & Schmidt, 2014) and is neither a recent issue nor confined to a specific geographic region or the academic community (Porter, 2014). Research by Quick (2020) and Deepal & Jayamaha (2022) highlights a wide range of empirical studies that assess the presence of AEG and the factors influencing it. These factors include differences in the prevention, detection, and disclosure of misstatements, the level of assurance behind the auditor's opinion, responsibility for financial reporting, and the effectiveness of internal controls, among others. Although less frequently examined, materiality has also been identified as a contributing factor to the AEG (Quick, 2020), as noted in various studies (e.g., Boterenbrood, 2017; Christensen et al., 2020; Houghton et al., 2011).

2.3. Materiality as a driver of the audit expectation gap

Materiality in auditing is determined through professional judgment exercised by the auditor. As outlined in ISAs 200 and 320, this judgment is shaped by the auditor's perception of users' information needs and the size and nature of detected misstatements. Although auditing standards and complementary guidelines (e.g., the Guide to Using International Standards on Auditing in the Audits of Small- and Medium-Sized Entities) provide frameworks for defining and applying materiality across audit planning and performing, and assessment of misstatements, interpretations of materiality can still differ among auditors, preparers, and users of financial reporting. According to Messier et al. (2005), these divergent views stem from the different incentives of the individuals involved in financial reporting – heterogeneous groups. The differences in how materiality is interpreted, both in quantitative and qualitative terms, have been highlighted in multiple studies (e.g., Jennings et al., 1987; Messier et al., 2005; Gray et al., 2011; Asare & Wright, 2012; Litjens et al., 2015; Boterenbrood, 2017; Doxey et al., 2020; CEAOB, 2022). For instance, Boterenbrood (2017) found that the average threshold for overall materiality was 2.45% of assets for auditors and 0.67% of assets for financial statement preparers.

Materiality determination is not a mechanical process, but a judgment-based task performed by the auditor. It involves a refined process, where auditors adjust their criteria to derive more realistic figures (Quick et al., 2023). However, this process also presents the challenge of identifying users and understanding their needs. DeZoort et al. (2019) found that there is no uniform view among users regarding the judgment of materiality, and Doxey et al. (2020) noted that users react asymmetrically to good and bad news events. This implies that auditors should consider the various dimensions of what is understood by a "reasonable" user, as materiality is defined from their perspective (DeZoort et al., 2023). Since in most countries, key elements such as benchmark selection, percentage applied, and qualitative considerations used in materiality judgments are not publicly disclosed, this lack of transparency contributes to an information gap, as standards do not provide clarity on how materiality was actually applied during the audit process.

The materiality gap can also stem from the wording used in the audit report, contributing to a communication gap. Ambiguous language in the standards may allow for interpretations shaped by individual preferences (Asare & Wright, 2012). ISA 700 mandates that auditors include a description of materiality in the audit report. However,

in most jurisdictions, this description is simplified, stating that materiality refers to matters that could reasonably be expected to influence users' economic decisions. The verbal expressions "reasonably" and "be expected" are inherently vague and ambiguous, potentially leading to interpretation differences (Doupnik & Richter, 2003; Du & Stevens, 2011) and communication inefficiencies (Reimers, 1992; Simon, 2002). Ambiguous language has been identified as a key factor contributing to the AEG (e.g., Humphrey et al., 1992; Kinney & Nelson, 1996). Jennings et al. (1987) found that users demand more explicit standards regarding materiality concept. In response, Humphrey et al. (1992) propose that rewording the audit report could enhance communication between auditors and users. Similarly, Asare & Wright (2012) advocate for a clearer, more precise definition of materiality within the audit report. In summary, the materiality gap inherently includes a communication gap, as the existing standards do not fully ensure clear and unambiguous communication of the concept of materiality by auditors.

Failing to apply materiality correctly during the audit process also contributes to a deficient performance gap or failure of the auditor. Logie and Maroun (2021) found issues in the application of materiality in some South African audits, which were revealed during the inspection and quality control processes conducted by the Regulator. Similarly, the CMVM (2024) identified instances where Portuguese auditing firms lacked sufficient or adequate support for their materiality assessments. These performance shortcomings in auditing practices lead to criticism and litigation against auditors, ultimately contributing to a loss of confidence in the profession. As Porter (2014) cautions, auditors have a duty to perform their work in a manner that meets society's reasonable expectations. AEG can be reduced if users are satisfied with the auditor's performance (Lee et al., 2009), which is achievable only if auditors, at the very least, succeed in minimizing the deficient performance gap.

Lastly, materiality can amplify the reasonableness gap and serve as an indicator of public failure. Several studies (e.g. Christensen et al., 2020; Gray et al., 2011; Coram et al., 2011; Houghton et al., 2011) show that users of audited financial statements do not always fully understand the concept of materiality. As a result, unrealistic differences in expectations arise from the beginning (Hay, 2020), specifically regarding what auditors could reasonably consider material, leading to discrepancies between users' expectations and the actual relevance of the information in their decision-making process.

The issue of the AEG can be addressed using a defensive strategy, such as expanding the audit report (Quick, 2020). The goal of expanding the report is to enhance the

understanding of the audit's nature, scope, and extent (Lee et al., 2009). This expansion may include additional information about the audit process, including a clearer description of how the auditor applies and judges' materiality. However, this approach is not universally agreed upon in the literature.

Fisher (1990) reports that publicly disclosing materiality is relevant to traders' decisions and enhances market efficiency. Manson and Zaman (2001) found that users supported the idea that the audit's value would improve if the report included the materiality level used, contrasting with auditors' opposing views on the matter. According to Manson and Zaman (2011), sharing materiality information can help users independently assess the potential distortion in financial statements. Turner et al. (2010) acknowledge that materiality is partially discussed with clients when reviewing non-trivial misstatements. However, since managers and those charged with governance are among the key stakeholders, the authors propose including materiality in the audit report to bridge the information gap. Litjens et al. (2015) found that banks valued materiality disclosures, reducing AEG within this group. Other studies, such as Jennings et al. (1987) and Mock et al. (2013), also advocate for reporting materiality levels in the audit report to benefit users. Based on interviews, Houghton et al. (2011) found that only some participants – mainly those with more experience and sophistication – viewed materiality disclosure positively, particularly due to the qualitative factors often involved in its determination. Coram et al. (2011) found no evidence that including materiality in an extended audit report reduces misperceptions. However, their study did not go beyond the content prescribed by ISA 700 for the long-form audit report. The authors acknowledge that granting auditors more discretion in disclosing information in audit report could potentially influence users' decisions and enhance the perceived quality of audits. Asare and Wright (2012) argue that the value of an audit is optimized when auditors and users share a common understanding of materiality.

In the last decade, a couple of studies have used experimental method to examine the implications of materiality disclosure on users' decisions. Ruhnke et al. (2018) found that credit lending decisions of executive board members of German banks were affected by the disclosure of materiality thresholds and qualitative factors, indicating that contractual effectiveness benefits from the auditor's materiality judgment as a signal of potential noise and bias in the financial statements. Christensen et al. (2020) found no evidence that professional investors incorporate disclosed materiality information into their decisions but noted that a higher quantitative materiality threshold increased investors' willingness

to invest – an unexpected outcome that led them to question the true relevance of materiality disclosures. In another study, Doxey et al. (2020) found that materiality disclosure does not affect investors' asymmetric responses to good or bad news events but helps align auditors' and investors' perceptions of materiality. In turn, Eilifsen et al. (2021) found that materiality disclosure is valuable to investors when judging the reliability of subjective fair value estimates. Without such disclosure, investors' behavior remains unchanged, showing no sensitivity to the uncertainty highlighted by the quantitative sensitivity analysis of the estimates. More recently, Festa et al. (2024) discovered that the whistleblowing behavior related to earnings manipulation is influenced by materiality disclosure. Specifically, when earnings manipulation is below the materiality threshold, the likelihood of whistleblowing is significantly lower when materiality is disclosed compared to when it is not disclosed.

Based on the extended audit report in the UK, some studies have shown contradictory findings regarding the mandatory disclosure of materiality. Gutierrez et al. (2018) found little evidence that materiality disclosure in UK extended audit reports influenced investors' decisions. However, Gutierrez et al. (2025) later observed a negative correlation between materiality disclosure and abnormal stock returns for companies listed on the UK Alternative Investment Market, suggesting that expanded audit reporting holds relevance for investors. Through content analysis, Dwyer et al. (2023) concluded that materiality disclosures are often complex and disconnected from the context of the audited entity, leading to a paradox where more information results in reduced transparency and a wider information gap. However, this study focused on the supply side (auditors) rather than analyzing the effect of materiality disclosure from the perspective of users of audited financial information. Quick et al. (2023) argue that materiality disclosure has enhanced transparency and reduced the information gap. However, they acknowledge that its usefulness may be limited due to the potential presence of abstract and standardized language, as well as the complexity arising from variations in the nature and extent of disclosures. This suggests that there is still room for more impactful disclosures.

In summary, materiality disclosure holds informational value (Eilifsen et al., 2021), and its inclusion in the audit report can help reduce AEG. In this context, we propose the following research hypothesis:

H1: Providing more detailed disclosure of materiality judgment in the audit report will reduce the AEG among users of audited financial statements

2.4. Decision-making style

Financial auditing plays a important role in enhancing the credibility of financial statements, helping investors and other stakeholders trust this information more when making decisions (Voinea et al., 2024). As outlined in ISA 200, the auditor's goal during an audit is to obtain reasonable assurance that the financial statements are free from material misstatement. This means that the financial information has been thoroughly examined and confirmed as reliable, enabling users to base their decisions on more trustworthy and transparent data (Karadjova et al., 2020). The literature contains numerous studies highlighting the significance of the audit report and the information disclosed by the auditor in the decision-making processes of various stakeholders (e.g., Carver et al., 2023; Geiger & Kumas, 2018; Ianniello & Galloppo, 2015; Ma et al., 2024; Schneider, 2018). Therefore, the reliability and timeliness of the audit report are essential for stakeholders, and its absence can hinder informed and effective decision-making.

Decision-making is influenced by individuals' habit patterns regarding how they process information in various situations. Decision-making styles describe the habitual way in which individuals respond when faced with a decision-making situation (Scott & Bruce, 1995) or represent the typical way individuals make decisions (Hamilton et al., 2016). Therefore, the main differences between styles are related to the amount of information considered and the number of alternatives identified in the decision-making process (Driver et al., 1998). According to Thunholm (2004), differences in decision-making are due to both habits and basic cognitive abilities, such as information processing, which consistently influence how responses are formulated across various decision-making tasks and contexts. These cognitive abilities reflect an individual's attitude or preference for acquiring, storing, retrieving, and transforming information (Ho & Rodgers, 1993). Some individuals engage in extensive deliberations, while others rely on quick intuition. Some adopt a cognitive and systematic approach, while others make decisions in a more affective and unsystematic way (Hamilton et al., 2016).

In dual-process theory, individuals are categorized into two types based on their information processing: intuitive and reflective (Evans & Stanovich, 2013). Those with intuitive thinking are characterized by processing information automatically, quickly, unconsciously, independently, associatively, and without relying on memory work (Phillips et al., 2016). In contrast, reflective thinking involves processing information in a controlled, slower, more conscientious, analytical, and rule-based manner, requiring

memory work (Phillips et al., 2016). Scott and Bruce (1995) identify five decision-making styles: rational, intuitive, dependent, avoidant, and spontaneous. An individual with a rational style is defined by a exhaustive search for information, the consideration of multiple alternatives, and the logical evaluation of these alternatives before making a decision (Scott & Bruce, 1995; Thunholm, 2004). In contrast, the intuitive style is distinguished by a focus on details and a reliance on feelings, instincts, and reactions, rather than the systematic search and processing typical of the rational style (Scott & Bruce, 1995). Rational decision-making is defined as the application of logic to determine the best choice (Uzonwanne, 2016). Rational individuals tend to rely on facts and believe that careful, accurate analysis is necessary before deciding. Betsch and Iannello (2009) add that the rational profile involves an extensive search for information and logical evaluation of options, ensuring that decisions are well-reasoned and accurate. On the other hand, intuitive decision-making is considered one of the simplest methods of decision-making, as individuals with this style prefer more direct and accessible information (Farrell, 2023).

According to ISA 320, it is reasonable for auditors to assume that users base their economic decisions on financial reporting, as financial information helps users understand an organization's past performance, current situation, and provides valuable support for planning future activities and decisions (Socea, 2012). Since the audit report is a key element of corporate accountability, it is expected that the disclosure of information in the audit report regarding the auditor's judgment of materiality will particularly influence users of financial statements who adopt a rational decision-making style. This style is based on logical evaluation, where individuals gather and analyze all available information to aid in the decision-making process (Uzonwanne, 2016). A individual with a rational style thinks systematically and seeks knowledge to structure problems properly and identify the best solutions. As a result, the disclosure of audit materiality is likely to interact more with a decision-making style marked by cognitive dissociation and requiring mental effort, as it provides information that helps the individual understand how a fundamental pillar of auditing has been applied. To some extent, auditing standards are ambiguous, and auditing tasks are complex (Glover et al., 2017). Implementing materiality in practice is a challenging and complex exercise (DeZoort et al., 2019), as it involves subjective professional judgment, characterized by two elements that define a complex task (Wood et al., 1990): the variety of informational cues that the auditor must process (e.g., entity type, investors, entity life cycle) and the

possibility of revising the concept throughout the audit. Alaybeck et al. (2022) found evidence that task performance is more strongly influenced by the interaction between task complexity and the reflective decision-making style than by the intuitive style. Additionally, Phillips et al. (2016) assert that decision outcomes are shaped by the interaction of decision-making style and the nature of the task. Limited knowledge about the nature of the audit (Fadzly et al., 2004) and the complexity of the auditors' role (Okoro et al., 2019) contribute to the AEG. Therefore, a comprehensive understanding of the audit report will improve the performance of users' tasks, which involve using financial information to make optimal economic decisions.

Gul (1984) provided evidence that managers' confidence in information-based decision-making is influenced by the interaction between shared accounting information and the decision maker's cognitive style (field dependence versus field independence). Hirsch et al. (2015) found no evidence that the interaction between decision-making style (sensing versus intuition) and the way information is presented (tables or graphs) affected the confidence and performance of decisions made by participants (managers and students). However, this study focused solely on the decision-making style related to the information acquisition dimension, overlooking the information processing and evaluation aspects – referred to as the judgment dimension (thinking versus feeling). Although some support was found for the interaction between data presentation and decision-making attributes, So and Smith (2003) suggest that future studies should examine how this interaction influences specific tasks related to the decision-making process.

Given this, we propose that decision-making style acts as a moderating factor and suggest the following research hypothesis:

H2: The impact of more detailed disclosure of materiality on the AEG of users of audited financial statements will be stronger for individuals with a rational decision-making style compared to intuitive individuals.

3. Methodology

3.1. Experimental design

This study examines whether AEG is influenced by more detailed disclosure of materiality judgment in the audit report and by users' decision-making style. We employed a 2 x 1 between-subjects experimental design with one manipulated variable

(explained materiality versus simplified materiality) and one moderator variable (decision-making style). Participants were randomly assigned to one of two treatment conditions: Group 1 received simplified materiality case, and Group 2 received expanded materiality case. The case used in the experiment was developed by the author and reviewed and discussed with four audit firm partners to ensure clarity and realism. The experiment was launched following approval from the Ethics Committee at the school where the author is affiliated. Participants completed the experiment on the Qualtrics platform.

3.2. Experimental procedure and independent variable

The experiment consisted of four phases (Appendix A). In the first phase, the study's objective was explained to the participants, and they were asked for their consent to take part in the experiment. In the second phase, participants were provided with financial information about a hypothetical Portuguese football club that participates in both national and international competitions. They also received a note on the accounting policy regarding players' economic rights, a communication to the supervisory body concerning a risk issue related to intangible assets, and part of the audit report. For simplicity, participants were not given the full financial statements, as Coram and Wang (2021) caution that too much information can distract participants from focusing on the audit report. The inclusion of a note on the recognition and measurement of intangible assets was due to the fact that players' economic rights are the main and core asset for football clubs (Lozano & Gallego, 2011) (Appendix B). Additionally, the matter communicated to the supervisory body highlighted the accounting complexity of intangible assets, which are subject to a higher risk of material misstatement (Appendix B). Materiality signals the risk associated with the audited entity and has an inverse relationship with audit effort (Christensen et al., 2020). Issues related to intangible assets are common topics within key audit matters (Kend & Nguyen, 2020), including in audit reports for football clubs. After reading the case, participants answered questions related to the dependent and moderating variables. Stage 3 included a question to assess the success of our manipulation, and the final stage gathered data to characterize the participants' profiles and evaluate their understanding and familiarity with audited financial reporting. The scales measuring AEG and decision-making style were back-translated by a native English speaker. Additionally, the QUALTRICS platform was

configured to prevent participants from going back and modifying their previous answers once they moved on to the next question.

The independent variable refers to the materiality information disclosed in the audit report, which can take two forms: simplified materiality and expanded materiality. Simplified materiality aligns with the materiality statement outlined in ISA 700, which is included in the Portuguese audit report models: *Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements*. Expanded materiality refers to a description in the audit report that provides information on how the quantitative level of materiality was determined, along with the qualitative factors considered in the judgment of misstatements. The quantitative disclosure of materiality was based on examples of assertions found in audit reports from the UK and a Dutch football club. The qualitative disclosure of materiality was developed based on the factors identified by Hegazy & Salama (2022) and refined through brainstorming sessions with four audit partners to ensure its practical applicability. In contrast to Christensen et al. (2020) and Eilifsen et al. (2021), who focused solely on the quantitative aspect of materiality in their experimental studies, we also chose to include the qualitative dimension. ISA 320 and 450 require that misstatements not material in size should also be assessed based on their nature and the context in which they occur. Houghton et al. (2011) and Hegazy and Salama (2022) found that qualitative factors are crucial in materiality judgement, and DeZoort et al. (2023) caution about the need for auditors to pay more attention to qualitative factors when assessing misstatements. The wording for these manipulations is presented in Appendix B. In the hypothesis tests, the level of materiality disclosure (MAT) is a dichotomous variable: it takes the value 1 when participants are provided with materials containing expanded materiality, and the value 0 when they are given materials with simplified materiality.

3.3. Moderating variable

The moderating variable in this study is decision-making style (DMS), which includes two dimensions: rational (RDM) and intuitive (IDM). The measurement of decision-making style was based on 10 items from the General Decision-Making Style instrument (Scott & Bruce, 1995). This instrument contains statements that describe how individuals make important decisions, which were evaluated on a 7-point Likert scale (1 = Strongly

Disagree; 7 = Strongly Agree). Each decision-making style is measured with 5 items. Subsequent studies have validated the use of this scale to measure decision-making styles (Loo, 2000; Gambetti et al., 2008), including in Portuguese (Lehnhart et al., 2023). The scale used is detailed in Appendix C.

Before calculating the participants' scores for the RDM and IDM dimensions, we conducted a confirmatory factor analysis to assess the validity and reliability of the constructs. Except for item IDM4, all other items showed loadings greater than 0.40 for their respective constructs. The reliability, as measured by Cronbach's Alpha (RDM = 0.86; IDM = 0.78) and composite reliability (RDM = 0.89; IDM = 0.81), indicates internal consistency between the items that make up the constructs, as these values exceed the 0.7 threshold suggested by Hair et al. (2022). The convergent validity of the two constructs was also assessed through the average variance extracted (RDM = 0.60; IDM = 0.50), with the values obtained being equal to or greater than 0.50 (Hair et al., 2022).

In this context, the RDM score was derived from the average of the five original items of the scale, while the IDM score was calculated using only four of the five items from the original Scott and Bruce (1995) scale. In the hypothesis test, the values for the DMS variable were calculated by subtracting the IDM score from the RDM score; the more positive (or negative) the result, the more the individual exhibits a rational (or intuitive) decision-making style. Our sample showed a predominance of individuals with a rational style (average of 5.86) compared to an intuitive style (average of 4.96), although no statistically significant differences were found between Groups 1 and 2 in terms of these characteristics.

3.4. Dependent variable

AEG is a multi-item construct comprising three dimensions: auditor responsibility (AR), audited financial statements reliability (FSR), and management responsibility (Gold et al., 2012; Coram & Wang, 2021). In this study, we focused on the first two dimensions of AEG, following the approach used by Coram and Wang (2021), who argued that these factors are most likely to influence perceptions related to the expansion of the audit report. The items used to measure each dimension were adapted from instruments previously used in the literature (Monroe, 1993; Gold et al., 2012; Coram & Wang, 2021). These items aim to assess the performance gap (e.g., the audited financial statements contain no deliberate distortions) and the reasonableness gap (e.g., the auditor is responsible for detecting all fraud). The items were measured using a 7-point Likert scale, where

participants expressed their agreement (1 = strongly disagree and 7 = strongly agree) with 15 statements presented after reading the case. Appendix C outlines the scale used. To conduct a preliminary assessment of the psychometric properties of the two scales, we performed an exploratory factor analysis with factor extraction using the principal components method, followed by varimax rotation. The analysis supports the existence of one factor for the auditor responsibility scale, while the financial statement reliability scale suggests the presence of two factors: factor 1 (FSR_FAT1) includes items FSR1, FSR2, FSR4, and FSR5, and factor 2 (FSR_FAT2) includes items FSR3, FSR7, FSR8, and FSR9[1]. This structure will be used in the hypotheses tests.

3.5. Participants

The target population for this study consists of potential users of financial statements, including accountants, tax experts, controllers, managers, and others. As noted by Bédard et al. (2016), evaluating the value generated by the expansion of the audit report should involve a wide range of users to assess the effectiveness of the enhanced information provided. Potential participants were contacted via LinkedIn and email through the network of alumni from the accounting master program at the author's school, Portuguese tax experts, and personal contacts. Therefore, the sample in this study is one of convenience, based on a non-probabilistic sampling technique.

The initial sample included 106 responses; however, the final sample consists of 96 responses, as 10 were excluded due to incomplete participation (failure to answer the questions in stages 3 and 4 of the experiment). The final sample comprises 53% male participants, with an average age of 39 and an average of 16 years of professional experience. Fifty-five percent hold positions involving the supervision and coordination of others' work. Additionally, eighty-two of the participants have an academic degree in economic or business sciences (bachelor's, postgraduate, master's, or PhD).

The experiment included four questions aimed at assessing the participants' understanding and perception of the usefulness of the audit report and the audited financial statements. These questions were evaluated on a 7-point Likert scale, with 1 = strongly disagree and 7 = strongly agree. Overall, participants demonstrated a reasonable self-assessment of the topic addressed in this study (Table 1). Additionally, they tended to agree somewhat that the auditing profession enjoys a positive reputation.

[1] Item FSR6 was dropped because it had a cross-loading between the two factors of less than 1.5 (Hair et al., 2019).

(Insert Table 1 here)

Finally, there were no statistically significant differences in the mean/proportions for these five questions, as well as for age, professional experience, gender, and supervisory roles, between groups 1 and 2. Thus, the study's inferences remain robust when controlling for the participants' socio-demographic characteristics.

4. Results

4.1. Manipulation check

To test the manipulation of the expanded audit report by providing more information about the materiality judgment, participants were asked to indicate their level of agreement with the statement, " the audit report provided in the study materials explicitly described the circumstances/factors considered in the auditor's materiality judgment during the audit of the Financial Statements", on a 7-point scale, with 1 = strongly disagree and 7 = strongly agree. The overall mean response was 5.02 (SD 1.61) for Group 2 (expanded materiality) and 3.96 (SD 1.81) for Group 1 (simplified materiality). The means differed significantly ($p < 0.01$), indicating successful manipulation.

4.2. Hypotheses tests

H1 predicts that providing more information on materiality results in a decrease in users' AEG. As a first step, we employed the multivariate analysis of variance (MANOVA) technique to further examine the effect of the *MAT* variable on the various indicators used to measure the latent variables *AR* and *FSR*. The MANOVA results for the general model of *AR* suggest that this AEG dimension is not associated to the level of materiality disclosure ($F = 0.828$; *p-value* = 0.551) (Table 2). However, the *AR5* item shows a statistically significant difference ($F = 3.437$; *p-value* = 0.067), suggesting that materiality disclosure impacts the perception of whether the auditor is responsible for preventing fraud. For the two *FSR* dimensions, the general models show no significant relationship with the level of materiality disclosure (*FSR_FAT1* has $F = 0.900$ and *p-value* = 0.468, while *FSR_FAT2* has $F = 0.339$ and *p-value* = 0.851) (Tables 3 and 4). Furthermore, none of the four items forming any of the *FSR* factors were found to be significant.

(Insert Table 2 to 4 here)

The two dependent variables related to AEG, namely the latent variables *AR* and *FSR*, are subject to measurement error. Therefore, in the second phase, we applied partial least squares structural equation modeling (PLS-SEM), a second-generation technique that treats latent variables as composites, accounts for measurement error inherent in these variables, and enables the analysis of complex relationships between observable and latent variables (Sarstedt et al., 2020; Hair et al., 2022)[2]. Model estimation in PLS-SEM involves two stages: evaluating the measurement model and evaluating the structural model (Hair et al., 2022), and was conducted using SMARTPLS 4 software (Ringle et al., 2024).

The analysis of the reflective measurement model focuses on construct validity, reliability, and discriminant validity. After an iterative process of scale purification, Table 5 presents the results of the measurement model assessment. The items have outer loadings greater than 0.40 and are statistically significant at the 1% level, indicating the reliability of the observable indicators (Hair et al., 2022). Internal consistency reliability is confirmed as both Cronbach's Alpha and Composite Reliability exceed 0.60 (Hair et al., 2022). The constructs also have average variance extracted values greater than 0.50, confirming their convergent validity (Hair et al., 2022). Finally, the HTMT values are below 0.85, demonstrating that the models have discriminant validity (Hair et al., 2022).

(Insert Table 5 here)

Table 6 presents the results of the path coefficients between the variables. The findings support the relationship between materiality disclosure in the audit report and the extent of the auditor's responsibility (H1a). Specifically, we found that a more detailed description of the auditor's materiality judgment reduces the responsibility users mistakenly attribute to the auditor regarding internal control systems, setting accounting policies, and preventing fraud. However, the results for the effect on the reliability of financial statements are not statistically significant (H1b and H1c). Thus, we conclude that AEG is only reduced in the auditor responsibility dimension when materiality is more extensively disclosed in the audit report.

[2] Alternatively, we could employ regression analysis using the PROCESS macro. However, Sarstedt et al. (2020) caution that this technique overlooks the measurement error in the latent variables, which is why component-based SEM is preferred for analyzing mediation, moderation or conditional processes.

Regarding H2, the results indicate that decision-making style does not impact the relationship between the level of materiality disclosure and AEG. As for effect sizes within the model, the results reveal only a small effect of materiality disclosure on auditor responsibility. In terms of the model's in-sample fit assessment, the R^2 statistic shows that the models explain only 5.4%, 3.2% and 1.4% of the variance in the *AG*, *FSR_FAT1* and *FSR_FAT2* variables, respectively. The cross-validated predictive ability test showed no statistically significant differences in the mean loss of prediction errors, suggesting that the model lacks out-of-sample predictive power (Hair et al., 2022).

(Insert Table 6 here)

4.3. Supplementary analysis for H1

The qualitative disclosures in the financial statements may influence users' perceptions of the two dimensions of AEG. As outlined in ISAs 315 and 320, the auditor must evaluate whether the qualitative disclosures contain material misstatements. To further investigate this, we conducted a supplementary experiment with a group of 45 participants (Group 3), who had access to the same material as Group 1, with two key differences: i) the accounting policy note on intangible assets was described in greater detail, particularly regarding management's judgment in measuring impairment losses (see Appendix B); and ii) the materiality disclosure was presented in an expanded form.

To check the effectiveness of the experimental manipulation, two questions were asked after participants completed the experimental questionnaire. The first question assessed whether "the audit report provided in the study materials explicitly described the circumstances/factors considered in the auditor's materiality judgment during the audit of the Financial Statements". Group 3 had an average response of 5.69 (SD = 1.18), while Group 1 had an average of 3.96 (SD = 1.81). The means are significantly different ($p < 0.01$). The second question evaluated whether "the accounting policy note provided in the study materials offered detailed and clear guidance on determining impairment losses for Intangible Assets – Players' Squad". Group 3 reported an average response of 5.29 (SD = 1.69), compared to 4.43 (SD = 1.63) for Group 1, with a statistically significant difference ($p < 0.05$). These findings indicate that manipulation was successful. Additionally, there were no statistically significant differences in the socio-demographic characteristics between Groups 1 and 3.

The MANOVA results for the general *AR* model suggest that this AEG dimension is related to the level of materiality disclosure (F = 2.169; *p-value* = 0.054) (Table 7). Providing users with more detailed information on accounting policies involving judgment, along with larger disclosure of materiality levels in both quantitative and qualitative terms, helps users develop a more accurate understanding of the auditor's responsibilities. Regarding the significance of individual variables, the results highlight three key items. The first, *AR1*, had an average response of 3.83 in Group 1 and 2.80 in Group 3, showing a statistically significant difference (F = 7.510; *p-value* = 0.007). The second, *AR5*, had an average response of 4.72 in Group 1 and 3.84 in Group 3, also reflecting a statistically significant difference (F = 4.773; *p-value* = 0.032). The third, *AR6*, had an average response of 3.09 in Group 1 and 2.33 in Group 3, with a statistically significant difference (F = 4.758; *p-value* = 0.032). While the remaining three variables also showed mean response differences in the same direction, these differences were not statistically significant.

For both FSR dimensions, the general models once again suggest no significant relationship with the level of materiality disclosure (*FSR_FAT1*: F = 0.488, *p-value* = 0.745; *FSR_FAT2*: F = 0.644, *p-value* = 0.667). Moreover, none of the individual items within the *FSR* factors showed statistical significance. In summary, the supplementary analysis provides some evidence that materiality disclosure has a partial impact on AEG, specifically through the auditor responsibility dimension.

(Insert Table 7 here)

5. Conclusion

The audit report serves as the primary instrument of communication between auditors and users of audited entities, conveying the auditor's opinion on whether the financial statements, as a whole, are free from material misstatement. Given that materiality is a fundamental concept in the auditing process, particularly in determining the type of opinion issued, it is essential to minimize the gap between public perceptions of this concept and the auditor's current performance in its application. The materiality gap is a component of the AEG, and its existence damages the social function of auditing. This study employs an experimental approach to assess whether providing a more detailed disclosure of materiality judgment – beyond current practices – affects the reduction of

AEG, particularly in terms of perceptions of auditor responsibility and financial statement reliability. Additionally, it examines whether users' decision-making styles influence this relationship.

Our findings indicate that providing more detailed disclosures on materiality enhances users' perceptions of auditor responsibility. The estimated path coefficient suggests that this dimension of AEG is reduced by 0.405 for users who received additional information about materiality. This effect is particularly evident in areas such as fraud prevention and detection, as well as the determination of accounting policies and estimates. This result aligns with previous studies showing that incorporating materiality information in the audit report benefits users (e.g., Ruhnke et al., 2018; Eilifsen et al., 2021; Festa et al., 2024; Gutierrez et al., 2025). Since the concept of materiality is not always well understood by users (Christensen et al., 2020; Houghton et al., 2011), its disclosure can help bridge the communication gap between auditors and the public. As Ruhnke and Schmidt (2014) suggest, this reinforces the potential for the audit report to serve as an educational tool, improving public understanding of the audit process and the auditor's responsibilities.

Another important aspect to highlight is the existing information gap. The current audit report model lacks a critical requirement outlined in ISA 320: the auditor's assessment of materiality is based on the surrounding circumstances and considers the size, nature, or a combination of both when evaluating a misstatement. Research has shown discrepancies between auditors' and users' assessments of materiality (e.g., Boterenbrood, 2017; CEAOB, 2022). At present, users have no means of determining whether auditors' perceptions of financial information's relevance to economic decisions align with their actual needs. Additionally, materiality is often associated with the "big numbers" in financial statements (Houghton et al., 2011). However, studies (e.g., Del Corte et al., 2010; Houghton et al., 2011; DeZoort et al., 2019; Hegazy & Salama, 2022) indicate that auditors also take qualitative factors into account in their judgments, as emphasized in ISA 320, which underscores the importance of considering qualitative disclosures in materiality assessments. Our findings highlight the significance of disclosing both the quantitative threshold and qualitative factors used in materiality judgments to reduce the AEG, particularly concerning auditor responsibility. As the IAASB (2011) states, the information gap can be narrowed by sharing relevant details that exist but are not publicly disclosed. Providing users with more information clarifies the auditor's role in the financial reporting process, ultimately enhancing confidence in their work.

This study finds that disclosing materiality does not influence users' perceptions of the reliability of financial statements. As noted by Christensen et al. (2020), this suggests that users may not fully understand the inverse relationship between materiality and audit effort. If auditors and users perceive materiality differently from the outset (e.g., CEAOB, 2022), it would be reasonable to expect users to adjust their perception of financial statement reliability accordingly. For instance, if a user's threshold for materiality is lower than what the auditor discloses[3], they might conclude that there is a higher risk of undetected or undisclosed material misstatements. In turn, this could lead them to view the financial statements as less credible. While enhanced disclosure brings greater transparency to the audit process, it does not achieve complete clarity (Dwyer et al., 2023). Therefore, further efforts are needed to improve users' understanding of three fundamental and complex audit concepts: materiality, audit evidence, and audit risk.

When examining the participants' decision-making style, the results indicate that their cognitive habits and abilities do not interact with the level of information disclosed about materiality in a way that alters AEG. This finding contradicts previous research suggesting that decision-making style influences the relationship between complex tasks and the performance or outcome of the decision-making process (e.g., Alaybeck et al., 2022; Phillips et al., 2016). Although DeZoort et al. (2019) and Dwyer et al. (2023) highlight materiality as a complex task from the auditor's perspective, the results of this study suggest that users do not perceive it as sufficiently complex or ambiguous to generate differences in cognitive processing between rational and intuitive individuals.

This study offers both theoretical and practical contributions. First, AEG is an under-researched phenomenon (Hay, 2020), and there are few studies examining the impact of materiality disclosure on the audit report (Christensen et al., 2020). This research advances the understanding of the effect of materiality disclosure on AEG by considering not only the quantitative but also the qualitative dimension of materiality and subsequently the qualitative disclosures in the financial statements. In doing so, this study stands apart from those that focus solely on the quantitative aspect of materiality (e.g., Christensen et al., 2020; Eilifsen et al., 2021) or fail to examine AEG from the users' perspective (e.g., Dwyer et al., 2023).

Secondly, this study employs scales previously used to measure AEG in the context of expanded audit report analysis (e.g., Gold et al., 2012), capturing a more comprehensive

[3] DeZoort et al. (2019, 2023) found evidence that unsophisticated investors had lower materiality thresholds than auditors, which raises additional concerns regarding the AEG.

understanding of the divergence between user and auditor perceptions regarding materiality judgment. In this way, we complement studies that have explored the effect of materiality disclosure on user decisions (e.g., Jennings et al., 1987; Litjens et al., 2015; Eilifsen et al., 2021; Gutierrez et al., 2025). However, we acknowledge that there are variations in the scales used to measure AEG (e.g., Gold et al., 2012; Coram & Wang, 2021; García-Hernández et al., 2022), suggesting that future research could refine these measures.

Thirdly, this study was conducted in a contextual setting rarely addressed in the literature. While auditors are required to apply ISAs in many countries, AEG remains a dynamic and socially constructed phenomenon (Hay, 2020; Astolfi, 2021). Extending this research to other countries would provide a deeper understanding of the cultural and institutional nuances influencing AEG and help assess the replicability of measures aimed at mitigating its impact.

Lastly, the use of PLS-SEM, a second-generation technique, represents a methodological innovation in the study of the materiality gap. It enables a more accurate assessment of relationships involving moderation effects, offering an advantage over the PROCESS macro approach (Sarstedt et al., 2020) or first-generation techniques (e.g., linear regression models, MANOVA) that fail to account for measurement error between observed variables and the construct. With a few exceptions (e.g., García-Hernández et al., 2022), studies examining AEG have not employed structural equation modeling, highlighting an important avenue for future research.

This study also offers valuable insights for policymakers and auditing practices. The findings contribute to the understanding of how materiality disclosure impacts the value of information in audited financial reporting. Previous research on the effects of materiality disclosure has yielded mixed and sometimes contradictory results (e.g., Litjens et al., 2015; Dwyer et al., 2023; Gutierrez et al., 2025). As a result, analyzing potential changes to the audit report could provide valuable insights for the auditing profession (Gray et al., 2011). With a few exceptions (UK, Netherlands, and China), Regulators have largely adopted a "wait and see" approach to requiring extended materiality disclosure (Christensen et al., 2020). In countries where AEG exists, our findings could help inform a cost/benefit analysis of potential regulatory changes regarding materiality disclosure and actions that could be taken to improve the public's understanding of materiality in the audit process.

This research is subject to certain limitations. Firstly, our sample is mostly composed of financial reporting users with a background in economics and management. It is to be expected that users with other academic backgrounds (e.g. engineering, law) will have less knowledge of accounting and auditing issues, and as such, the level of pre-existing AEG will be different. Secondly, we recognize that previous professional experience in auditing can affect participants' AEG. The high turnover of staff in auditing firms is well known, so several of the participants may have worked in these organizations. Future studies could use this information on the participants' knowledge of auditing and check its impact on the materiality gap, as well as its moderating effect between disclosure of materiality and AEG. Thirdly, the sample has a strong presence of individuals with a rational decision-making style. The absence of a sample that is more balanced between decision-making styles could condition the results of H2.

References

Alaybek B., Wang Y., Dalal R.S., Dubrow S., Boemerman, L.S.G. (2022). The relations of reflective and intuitive thinking styles with task performance: A meta-analysis. *Personnel Psychology*, 75(2), 295–319.

Almeida, B.J.M. & Colomina, C.I.M. (2008). Evidencia de las diferencias de expectativas en auditoria en mercados bursátiles de reducida dinesión: El caso portugués. *Revista Contabilidade & Finanças*, 19(47), 102–111.

Akther, T., & Xu, F. (2020). Existence of the audit expectation gap and its impact on stakeholders' confidence: The moderating role of the financial reporting council. *International Journal of Financial Studies*, 8(1), 4.

Asare, S.K. & Wright, A.M. (2012). Investors', auditors', and lenders' understanding of the message conveyed by the standard audit report on the financial statements. *Accounting Horizons*, 26 (2), 193–217.

Astolfi, P. (2021). Did the international financial reporting standards increase the audit expectation gap? An exploratory study. *Accounting in Europe*, 18(2), 166–195.

Bédard, J., Coram, P., Espahbodi, R., & Mock, T. J. (2016). Does recent academic research support changes to audit reporting standards?. *Accounting Horizons*, 30(2), 255–275.

Betsch, C., & Iannello, P. (2009). Measuring individual differences in intuitive and deliberate decision-making styles. *Foundations for Tracing Intuition: Challenges and Methods*, 14, 245–251.

Blokdijk, H., Drieenhuizen, F., Simunic, D. A., & Stein, M. T. (2003). Factors affecting auditors' assessments of planning materiality. *Auditing: A Journal of Practice & Theory*, 22(2), 297–307.

Boterenbrood, R. (2017). The audit expectation gap between companies and their auditors: An exploratory study. *Global Business Review*, 18(5), 1124–1133.

Cao, T. Duh, R.-R., Tan, H.-T. & Xu, T. (2022). Enhancing auditors' reliance on data analytics under inspection risk using fixed and growth mindsets. *The Accounting Review*, 97(3), 131–153.

Carpenter, B. W., & Dirsmith, M. W. (1992). Early debt extinguishment transactions and auditor materiality judgments: A bounded rationality perspective. *Accounting, Organizations and Society,* 17(8), 709–739.

Causholli, M. & Knechel, W.R. (2012). An examination of the credence attributes of an audit. *Accounting Horizons*, 26(4), 631–656.

Carver, B., Muriel, L., & Trinkle, B.S. (2023). Does the reporting of critical audit matters affect nonprofessional investors' perceptions of auditor credibility, information overload, audit quality, and investment risk?. *Behavioral Research in Accounting*, 35 (1), 21–44.

CEAOB (2022). *Report on the CEAOB survey: Materiality in the context of an audit*. Available at https://finance.ec.europa.eu/system/files/2022-09/220701-ceaob-report-materiality-audit_en.pdf

Çeltikci, N.P. (2024). Audit expectation gap: A bibliometric analysis based on scopus and WoS data (1992-2024). *Ege Academic Review*, 24(3), 463 – 480.

Chong, K. M., & G. Pflugrath, G. (2008). Do different audit report formats affect shareholders' and auditors' perceptions? *International Journal of Auditing*, 12(3), 221–241.

Choudhary, P., Merkley, K., & Schipper, K. (2019). Auditors' quantitative materiality judgments: Properties and implications for financial reporting reliability. *Journal of Accounting Research*, *57*(5), 1303–1351.

Christensen, B.E, Glover, S.M., & Wolfe, C.J (2014). Do critical audit matter paragraphs in the audit report change nonprofessional investors' decision to invest?. *Auditing: A Journal of Practice & Theory*, 33(4), 71–93.

Christensen, B.E., Eilifsen, A., Glover, S.M. & Messier, W.F. (2020). The effect of audit materiality disclosures on investors' decision making. *Accounting, Organizations and Society*, 87, 101168.

Christensen, B., Schmardebeck, R. & Seidel, T. (2022). Do auditors' incentives affect materiality assessments of prior-period misstatements?. *Accounting, Organizations and Society*, 101,101332.

Comissão do Mercado de Valores Mobiliários (CMVM) (2024). *Resultados globais do sistema de controlo de qualidade da auditoria: Ciclo 2023/2024*. Available at: https://www.cmvm.pt/PInstitucional/PdfViewer?Input=70A02E022D9E5F41A4902C15C3A5A468925190540889BB067C256183B25C09CD

Coram, P., T. Mock, J. Turner, and G. Gray. 2011. The communicative value of the auditor's report. *Australian Accounting Review*, 21(3), 235–252.

Coram, P.J. & Wang, L. (2021). The effect of disclosing key audit matters and accounting standard precision on the audit expectation gap. *International Journal of Auditing*, 25(2), 270–282.

Deepal, A.G. & Jayamaha, A. (2022). Audit expectation gap: a comprehensive literature review. *Asian Journal of Accounting Research*, 7(3), 308–319.

del Corte, J.M., García, F. J.M. & Laviada, A.F. (2010). Effective use of qualitative materiality factors: evidence from Spain. *Managerial Auditing Journal*, 25(5), 458–483.

DeZoort, F.T., Holt, T.P., & Stanley, J.D. (2019). A comparative analysis of investor and auditor materiality judgments. *Auditing: A Journal of Practice & Theory*, 38(3), 149–166.

DeZoort, F.T., Holt, T.P., & Stanley, J.D. (2023). How do investor and auditor materiality judgments compare?. *Current Issues in Auditing*, 17(1), P1–P10.

Doupnik, T.S. & Richter, M. (2003). Interpretation of uncertainty expressions: a cross-national study. *Accounting, Organizations and Society*, 28(1), 15–35.

Doxey, M.M., Hatfield, R.C., Rippy, J.A., & Peel, R.K. (2020). Asymmetric investor materiality and the effects of disclosure. *Auditing: A Journal of Practice & Theory*, 39(2), 27–50.

Driver, M. J., Brousseau, K. E., & Hunsaker, P. L. (1998). *The dynamic decision maker*. San Francisco: Jossey-Bass Publishers.

Du, N. & Stevens, K. (2011). Numeric-to-verbal translation of probability expressions in SFAS5. *Managerial Auditing Journal*, 26(3), 248–262.

Dwyer, K.-A.M., Brennan, N.M. & Kirwan, C.E. (2023). Auditor materiality in expanded audit reports: More (disclosure) is less. *Australian Accounting Review*, 33(1), 31–45.

Eilifsen, A., Hamilton, E.L., & Messier, W.F. (2021). The importance of quantifying uncertainty: Examining the effects of quantitative sensitivity analysis and audit materiality disclosures on investors' judgments and decisions. *Accounting, Organizations and Society*, 90, 101169.

Eilifsen, A., & Messier, W. F. (2015). Materiality guidance of the major public accounting firms. *Auditing: A Journal of Practice & Theory*, *34*(2), 3–26.

Elsayed, M., Elshandidy, T. & Ahmed, Y. (2023). Is expanded auditor reporting meaningful? UK evidence. *Journal of International Accounting, Auditing and Taxation*, 53, 100582.

Evans, J. St. B. T., & Stanovich, K. E. (2013). Dual-Process Theories of Higher Cognition: Advancing the Debate. *Perspectives on Psychological Science*, 8(3), 223–241.

European Union (EU). (2014). *Regulation (EU) No 537/2014 of the European parliament and of the Council of 16 april 2014 on specific requirements regarding statutory audit of public-interest entities and repealing commission decision 2005/909/EC*. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0537

Fadzly, M.N. & Ahmad, Z. (2004). Audit expectation gap. *Managerial Auditing Journal*, 19(7), 897–915.

Farrell, M. (2023). *Data and Intuition: Good Decisions Need Both*. Available at: https://www.harvardbusiness.org/data-and-intuition-good-decisions-need-both/

Festa, M.M., Holderness, Jr., D.K., Jones, M.M., & Riley, Jr., R.A. (2024). The unintended consequences of audit materiality disclosures on whistleblowing intentions. *Accounting Horizons*, 38(4), 97–105.

Fisher, M. H. (1990). The effects of reporting auditor materiality levels publicly, privately, or not at all in an experimental markets setting. *Auditing: A Journal of Practice and Theory*, 9(Supplement), 84–222.

Fotoh, L.E. & Lorentzon, J.I. (2023). Audit digitalization and its consequences on the audit expectation gap: A critical perspective. *Accounting Horizons*, 37(1), 43–69.

Gambetti, E., Fabbri, M., Bensi, l. & Tonetti, L. (2008). A contribution to the Italian validation of the General Decision-making Style Inventory. *Personality and Individual Differences*, 44(4), 842–852.

García-Hernández, B., Duréndez, A. & Rojo-Ramírez, A.A. (2022). The audit expectation gap and strengthened independence standards in the European Union: measuring the effects of the new EU Directive. *Accounting Forum*, 46(3), 264–286.

Geiger, M.A. & Kumas A. (2018). Anticipation and reaction to going-concern modified audit opinions by sophisticated investors. *International Journal of Auditing*, 22(3), 522–535.

Glover, S.M., Taylor, M.H., & Wu, Y.-J. (2017). Current practices and challenges in auditing fair value measurements and complex estimates: Implications for auditing standards and the academy. *Auditing: A Journal of Practice & Theory*, 36(1), 63–84.

Gold, A., Gronewold, U., & Pott, C. (2012). The ISA 700 auditor's report and the audit expectation gap - Do explanations matter?. *International Journal of Auditing*, 16(3), 286–307.

Gul, F.A. (1984). The joint and moderating role of personality and cognitive style on decision making. The Accounting Review, 59(2), 264–277.

Gutierrez, E., Minutti-Meza, M., Tatum, K.W., & Vulcheva, M. (2018). Consequences of changing the auditor's report: Evidence from the U.K.. *Review of Accounting Studies*, 23(4), 1543–1587.

Gutierrez, E., Minutti-Meza, M., Tatum, K.W., & Vulcheva, M. (2025). The consequences of expanded audit reports for small and risky companies. *Contemporary Accounting Research*, 42(1), 576–614.

Gray, G.L., Turner, J.L., Coram, P.J. & Mock, T.J. (2011). Perceptions and misperceptions regarding the unqualified auditor's report by financial statement preparers, users, and auditors. *Accounting Horizons*, 25(4), 659–84.

Hair, J.F., Black, W.C., Babin, B.J. &Anderson, R.E. (2019). *Multivariate data analysis*, *Eighth Edition*. Hampshire, UK: Cengage Learning.

Hair, J., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2022), *A primer on partial least squares structural equation modeling (PLS-SEM)*. 3rd ed., Sage Publications, Los Angeles, CA.

Hamilton, K., Shih, S.-I. & Mohammed, S. (2016). The development and validation of the rational and intuitive decision styles scale. Journal of Personality Assessment, 98(5), 523–535.

Hay, D. (2020). *The future of auditing*. Abingdon, UK: Routledge.

Hegazy, M.A.A. & Salama, S. (2022). Effects of qualitative factors and auditors' personal characteristics on materiality judgments. *Managerial Auditing Journal*, 37(3), 305–335.

Hirsch, B., Seubert, A., & Sohn, M. (2015). Visualisation of data in management accounting reports. *Journal of Applied Accounting Research*, 16(2), 221–239.

Ho, J.L., & Rodgers, W. (1993). A review of accounting research on cognitive characteristics. *Journal of Accounting Literature*, 12, 101–130.

Houghton, K., Jubb, C. & Kend, M. (2011). Materiality in the context of audit: the real expectations gap. *Managerial Auditing Journal*, 26(6), 482–500.

Humphrey, C., Moizer, P., & Turley, S. (1992). The audit expectations gap—plus ca change, plus c'est la meme chose?. *Critical Perspectives on Accounting*, 3(2), 137–161.

Ianniello, G. & Galloppo, G. (2015). Stock market reaction to auditor opinions – Italian evidence. *Managerial Auditing Journal*, 30(6/7), 610–632.

Imoniana, J. O., Murcia, F. D.-R., & Schumaher Jr, A. (2023). Audit materiality and contexts that impact the auditor's test judgement. *Revista de Contabilidade e Controladoria*, 15(2), 25–54.

International Auditing and Assurance Standards Board (IAASB) (2011). *Enhancing the value of auditor reporting: Exploring options for change*. New York, NY: International Federation of Accountants.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 200: Overall objectives of the independent auditor and the conduct of an audit in accordance with international standards on auditing. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 104–121.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 260(revised): Communication with those in charged in governance. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 213–229.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 300: Planning an audit of financial statements. *Handbook of*

International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I, New York: IFAC, 237–245.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 315 (revised 2019): Identifying and assessing the risks of material misstatement. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 246–323.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 320: Materiality in planning and performing an audit. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 324–329.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 450: Evaluation of misstatements identified during the audit. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 358–365.

International Auditing and Assurance Standards Board (IAASB) (2024). International standard on auditing 700(revised): Forming an opinion and reporting on financial statements. *Handbook of International Quality Management, Auditing, Review, Other Assurance, and Related Services Pronouncements, 2023-2024 Edition, Volume I*, New York: IFAC, 595–630.

Jayasena, S.K., Ajward, R., & Dissabandara, H. (2019). Investors' perception and audit expectation-performance gap (AEG) in the context of listed firms in Sri Lanka. *CA Journal of Applied Research*, 3, 1–27.

Jennings, M., Kneer, D.C. & Reckers, P.M.J. (1987). A re-examination of the concept of materiality: Views of auditors, users, and officers of the court. *Auditing: A Journal of Practice & Theory*, 6(2), 104–115.

Karadjova, V., Blazheva, S., Nikolovski, P., Mircheska, K., Malakovska, M., & Macedonia, N. (2020). The importance of auditor's report. *International Journal of Sciences: Basic and Applied Research*, 54(2), 174–180.

Kend, M. & Nguyen, L.A. (2020). Investigating recent audit reform in the Australian context: An analysis of the KAM disclosures in audit reports 2017–2018. *International Journal of Auditing*, 24(3), 412–430.

Kinney,W. R. & Nelson, M.W. (1996). Outcome information and the expectations gap: the case of loss contingencies. *Journal of Accounting Research*, 34(2), 281–297.

Lee, T. H., Ali, A., & Bien, D. (2009). Towards an understanding of the audit expectation gap. *The ICFAI Journal of Audit Practice*, 6(1), 7–35.

Lehnhart, E.R., Tontini, J., Bender, C.S. & Tagliapietra, R.D. (2023). Brazilian version of the General Decision-Making Style Inventory – GDMS: Translation, adaptation and validation. *Revista Eletrônica de Administração*, 29(2), 311–336.

Litjens, R, Van Buuren, J. & Vergoossen, R (2015). Addressing information needs to reduce the audit expectation gap: Evidence from Dutch bankers, audited companies and auditors. *International Journal of Auditing*, 19(3), 267–281.

Logie, J., & Maroun, W. (2021). Evaluating audit quality using the results of inspection processes performed by an independent regulator. *Australian Accounting Review*, 31 (2), 128–149.

Loo, R. (2000). A psychometric evaluation of the general decision-making style inventory. *Personality and Individual Differences*, 29(5), 895–905.

Lozano, F.J.M., & Gallego, A.C. (2011). Deficits of accounting in the valuation of rights to exploit the performance of professional players in football clubs. A case study. *Journal of Management Control*, 22, 335–357.

Ma, Q., Zhou, J., Wang, Q., & Wang, K. (2024). The impact of key audit matters on goodwill accounting and investment behavior: Evidence from China. *International Review of Financial Analysis*, 93, 103144.

Manson, S. & Zaman, M. (2001). Auditor communication in an evolving environment: Going beyond SAS 600 auditor's reports of financial statements. *The British Accounting Review*, 33(2), 113–136.

Masoud, N. (2017). Audit expectation gap among undergraduate accounting students at Jordanian universities. *The Journal of Private Equity*, 20(2), 73–89.

Messier, W.F., Martinov-Bennie, N., & Eilifsen, A. (2005). A review and integration of empirical research on materiality: Two decades later. *Auditing: A Journal of Practice & Theory*, 24(2), 153–187.

Minutti-Meza, M. (2021). The art of conversation: The expanded audit report. *Accounting and Business Research*, 51(5), 548–581.

Mock, T. J., Bédard, J., Coram, P. J., Davis, S. M., Espahbodi, R., & Warne, R. C. (2013). The audit reporting model: Current research synthesis and implications. *Auditing: A Journal of Practice & Theory*, 32(Supplement 1), 323–351.

Monroe, G. S., & Woodliff, D. R. (1993). The effect of education on the audit expectation gap. *Accounting & Finance,* 33(1), 61–78.

Okoro, L., Ugwoke, O.V. & Ugwoke, R.O. (2019). Contributions of auditors' disposition, skill and performance to the existence of audit expectation gap in the public sector in Nigeria. International Journal of Mechanical Engineering and Technology (IJMET), 10(12), 465–483.

OROC (2025). *GAT 1: Aplicação das normas internacionais de auditoria – Modelos de certificação legal das contas / Relatório de auditoria*. Available at: https://www.oroc.pt/uploads/circulares/2025/Circular%203.pdf

Phillips, W. J., Fletcher, J. M., Marks, A. D. G., & Hine, D. W. (2016). Thinking styles and decision making: A meta-analysis. *Psychological Bulletin*, 142(3), 260–290.

Popa, I. E., Span, G., Dumitru, M., Dumitru, V. F., & Filip, C. L. (2013). Empirical study on the implications of qualitative factors in making decisions related to the materiality level: The case of Romania, *Economic Research Ekonomska Istraživanja*, 26(4), 43–58.

Porter, B. (1993). An empirical study of the audit expectation-performance gap. *Accounting and Business Research*, 24(93), 49–68.

Porter, B. (2014). The audit expectation gap: A persistent but changing phenomenon. In: Hay, C.D., Knechel, W.R. & Willekens, M. (Eds). *The Routledge Companion to Auditing*. Abingdon, UK: Routledge, 43–53.

Quick, R. (2020). The audit expectation gap: A review of the academic literature. *Maandblad Voor Accountancy En Bedrijfseconomie*, *94*(1/2), 5–25.

Quick, R., Zaman, M. & Mandalawattha, G. (2023). Auditors' application of materiality: insight from the UK. *Accounting Forum*, 47(1), 24–46.

Reid, L.C., Carcello, J.V., Li, C., Neal, T.L., & Francis, J.R. (2019). Impact of auditor report changes on financial reporting quality and audit costs: evidence from the United Kingdom. *Contemporary Accounting Research*, 36(3), 1501–1539.

Reimers, J. L. (1992). Additional evidence on the need for disclosure reform. *Accounting Horizons*, 6(1), 36–41.

Ringle, C. M., Wende, S., and Becker, J.-M. (2024). SmartPLS 4. Bönningstedt: SmartPLS. Available at https://www.smartpls.com.

Ruhnke, K., & Schmidt, M. (2014). The audit expectation gap: Existence, causes, and the impact of changes. *Accounting and Business Research*, 44(5), 572–601.

Ruhnke, K., Pronobis, P., & Michel, M. (2018). Effects of audit materiality disclosures: Evidence from credit lending decisions adjustments. *Betriebswirtschaftliche Forschung und Praxis (BFuP)*, 70(4), 440–466.

Sarstedt, M., Hair, J.F., Nitzl, C., Ringle, C.M. & Howard, M.C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses!. *International Journal of Marketing Research*, 62(3), 288–299.

Schneider, A. (2018). Studies on the impact of accounting information and assurance on commercial lending judgments. *Journal of Accounting Literature*, 41(1), 63–74.

Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement*, 55(5), 818–831.

Simon, J. (2002). Interpretation of probability expressions by financial directors and auditors of UK companies. *European Accounting Review*, 11(3), 601–629.

So, S., & Smith, M. (2003). The impact of presentation format and individual differences on the communication of information for management decision making. *Managerial Auditing Journal*, 18(1), 59–67.

Socea, A. D. (2012). Managerial decision-making and financial accounting information. *Procedia - Social and Behavioral Sciences*, 58, 47–55.

Thunholm, P. (2004). Decision-making style: habit, style or both?. *Personality and Individual Differences*, 36(4), 931–944.

Turner, J. L., Mock, T. J., Coram, P. J., & Gray, G. L. (2010). Improving transparency and relevance of auditor communications with financial statement users. *Current Issues in Auditing*, 4(1), A1–A8.

Uzonwanne, F. C. (2016). Rational model of decision making. In A. Farazmad, (Ed), *Global Encyclopedia of Public Administration, Public Policy, and Governance*, 2nd edition, (1–6), Springer.

van Brenk, H., Renes, R. & Trompeter, G.M. (2022). Auditing in the public interest: Reforming the profession by building on the strengths of the existing accounting firms. *Critical Perspectives on Accounting*, 83, 102184.

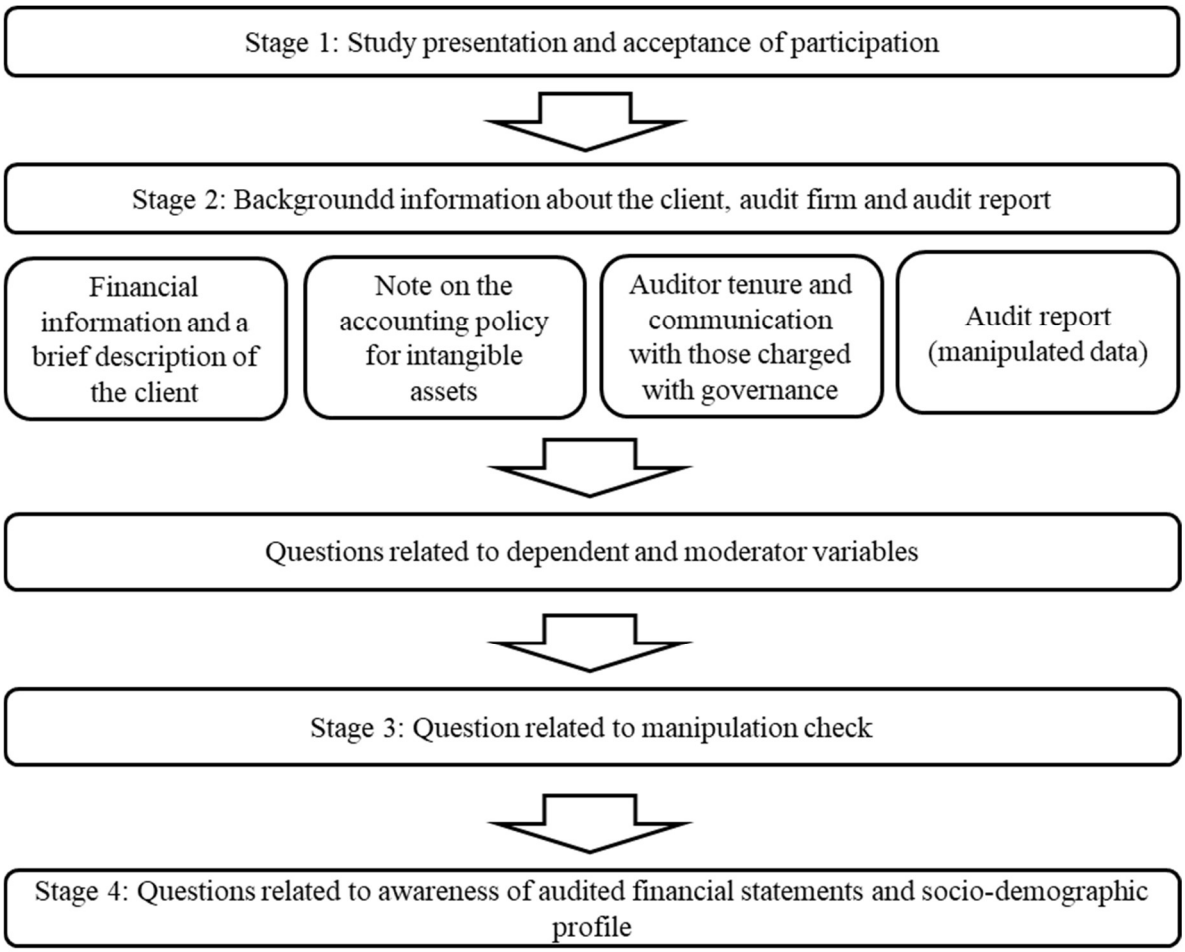
Vanstraelen, A., Schelleman, C., Meuwissen, R., & Hofmann, I. (2012). The audit reporting debate: Seemingly intractable problems and feasible solutions. *European Accounting Review*, 21(2), 193–215.

Voinea, C. M., State, V., Coman, D. M., & Dascălu, A.-M. (2024). The role and importance of the financial audit report in the decision-making process in audited companies. *Valahian Journal of Economic Studies*, 15(1), 87–94.

Wood, R., Bandura, A., & Bailey, T. (1990). Mechanisms governing organizational performance in complex decision-making environments. *Organizational Behavior and Human Decision Processes*, 46(2), 181–201.

Zhu, L., Zheng, Q., & Li, Y. (2024). Is audit materiality informative? Evidence from China. *China Journal of Accounting Research*, 17(3), 100373.

Appendix A: Experimental procedures



Appendix B: Experimental case

In the following, you will obtain information about XPTO – Futebol, SAD and the audit report on its financial statements. After reading the case, you will be presented with a set of questions for which we ask for your genuine judgment.

XPTO – Futebol, SAD

XPTO – Futebol, SAD is a company that competes in professional football competitions in Portugal and regularly participates in UEFA tournaments. In the current financial year, XPTO has met the sporting objectives set at the beginning of the year. The financial statements for the last fiscal year were prepared and presented in accordance with the Accounting and Financial Reporting Standards adopted in Portugal through the Accounting Standardization System. The following key financial figures were gathered (values expressed in millions of euros):

Balance sheet

	30/06/2023	**30/06/2022**
Non-current assets	200	180
Intangible assets – player squad	140	110
Tangible assets	60	70
Current assets	70	65
Total assets	**270**	**245**
Equity	30	10
Liabilities	240	235
Total equity and liabilities	**270**	**245**

Statement of profit or loss

	30/06/2023	**30/06/2022**
Sales and services rendered	130	115
Operating expenses	135	100
Operating result (excluding player transactions)	-5	15
Amortization and impairment of player squad	45	25
Gains on player transactions	65	30
Operating result from player transactions	20	5
Operating results	**15**	**20**
Financial results	-10	-10
Income before taxation	**5**	**10**
Income tax for the period	1	2
Net income for the period	**4**	**8**

Note on the Accounting Policy for Intangible Assets – Player Squad

The value of the squad included in the "Intangible Assets" account is recorded at acquisition cost, less amortization and impairment losses. The acquisition cost includes expenses incurred in acquiring the economic and federative rights of professional football players, recruitment-related

expenses (such as intermediation commissions, solidarity mechanisms, and signing bonuses), and the financial discounting effects associated with the agreed-upon payment plans. The sporting rights of players are amortized using the straight-line method over the duration of their contract. At each reporting date, the book value of intangible assets is reviewed to determine whether there is any indication of impairment. If there is evidence that an asset's net book value exceeds its estimated recoverable amount, an impairment loss is recognized and recorded in the income statement.

Note on the Accounting Policy for Intangible Assets – Player Squad (information provided only in the supplementary experiment)

The value of the squad included in the "Intangible Assets" account is recorded at acquisition cost, less amortization and impairment losses. The acquisition cost includes expenses incurred in acquiring the economic and federative rights of professional football players, recruitment-related expenses (such as intermediation commissions, solidarity mechanisms, and signing bonuses), and the financial discounting effects associated with the agreed-upon payment plans. The sporting rights of players are amortized using the straight-line method over the duration of their contract. At each reporting date, the book value of intangible assets is reviewed to determine whether there is any indication of impairment. The club annually assesses impairment indicators through an analysis of the players' situations, considering the squad composition (the main cash-generating unit), as well as qualitative and quantitative indicators such as sporting performance, prospects for development, potential transfer negotiations, market value on the Transfermarkt website, remaining contract duration, temporary loans to other clubs, age, salary, playing time, injuries, contractual disputes, among other factors. If there is evidence that an asset's net book value exceeds its estimated recoverable amount, an impairment loss is recognized and recorded in the income statement.

Auditor

The club's financial statements have been audited for the past four years by OMEGA, an auditing firm with a strong reputation in the market and part of an international network of audit firms. As part of the matters communicated internally to the Club's Supervisory Body, OMEGA reported the following:

The complexity of professional player acquisition contracts, the amounts involved, the degree of subjectivity inherent in assessing impairment of these assets, and certain issues identified in this area in previous years, contributed to this matter being considered significant during the course of our audit. We also recommend that the Supervisory Body strengthen its oversight of this aspect of financial reporting.

Independent Auditor’s Report

Opinion

We have audited the accompanying financial statements of XPTO - Futebol, SAD, which comprise the balance sheet as of June 30, 2023 (showing a total of €270 million and a total equity of €30 million, including a net profit of €4 million), the statement of profit or loss, the statement of changes in equity, and the cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements give a true and fair view, in all material respects, of the financial position of XPTO - Futebol, SAD as of June 30, 2023, and its financial performance and cash flows for the year then ended, in accordance with the Accounting and Financial Reporting Standards adopted in Portugal through the Accounting Standardization System.

Basis for Opinion

We conducted our audit in accordance with the International Standards on Auditing (ISA) and other technical and ethical standards and guidelines as issued by Ordem dos Revisores Oficiais de Contas (Instituto of Statutory Auditors). Our responsibilities under these standards are further described in the "Auditor’s Responsibilities for the Audit of the Financial Statements" section below. We are independent of the Entity in accordance with the law and we have fulfilled other ethical requirements in accordance with the Code of Ethics of the Ordem dos Revisores Oficiais de Contas.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Supporting Information for Our Opinion – Materiality (extended materiality disclosure)

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion. Materiality represents the magnitude of an omission or misstatement that, individually or in aggregate, could reasonably be expected to influence the economic decisions of users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

Based on our professional judgment, we set materiality for the financial statements as a whole at €1.3 million (2022: €1.2 million), corresponding to 1% of reported revenue from sales and services. We selected revenue as a benchmark after analyzing the common informational needs of financial statement users, the entity’s characteristics, and the industry in which it operates.

We also considered misstatements and/or potential misstatements that, in our opinion, are material due to qualitative factors. Our assessment included factors such as: (i) tax impact and regulatory compliance relevant to the entity; (ii) effects on contractual relationships with creditors, debtors, as well as business continuity; (iii) the intent and beneficiaries of misstatements; (iv) the effect of such situations on the recognition of an impairment loss or uncertainties related to judgments and estimates of amounts and disclosures; (v) management incentive systems; (vi) volume and nature of transactions with external entities, including related parties; (vii) industry-specific disclosures; (viii) the severity of risks beyond the entity's control; (ix) the financial, commercial, and strategic circumstances of the entity; (x) impact of new financial reporting standards and qualitative disclosures significant to the entity; and (xi) the impact of misstatements on understanding the entity's financial position and performance, risk assessment, and decision-making by key users of the financial statements.

We agreed with the entity's Supervisory Body to report any identified misstatements exceeding €65,000 (2022: €58,000) and reclassifications exceeding €130,000 (2022: €120,000), along with any smaller misstatements that we believe should be reported due to qualitative considerations.

Auditor's Responsibilities for the Audit of the Financial Statements

Our responsibility is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements may arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users based on these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement in the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls;
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate under the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control;
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management;

- Conclude on the appropriateness of management's use of the going concern assumption and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that there is a material uncertainty, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Entity to cease operations;
- Evaluate the overall presentation, structure, and content of the financial statements, including disclosures, and whether these financial statements represent the underlying transactions and events in a manner that achieves fair presentation;
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control identified during the audit.

Appendix C: Scales

Decision-making style scale

Construct	Items	Statements	Mean	SD
Rationale	RDM1	I double-check my information sources to be sure I have the right facts before making a decision	5.71	1.19
	RDM2	I make decisions in a logical and systematic way	5.80	0.90
	RDM3	My decision making requires careful thought	6.02	1.08
	RDM4	When making a decision, I consider various options in terms of a specific goal	5.89	1.07
	RDM5	I explore all of my options before making a decision	5.89	1.18
	RDM	Summative score	29.30	4.41
Intuitive	IDM1	When making a decision, I rely upon my instincts	4.82	1.51
	IDM2	When I make decisions, I tend to rely on my intuition	4.85	1.55
	IDM3	When I make a decision. I trust my inner feelings and reactions	4.64	1.56
	IDM4	When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it	3.31	1.85
	IDM5	I generally make decisions that feel right to me	5.54	1.17
	IDM	Summative score	19.85	4.55

Auditor responsibility scale

		Total sample		Extended MAT		Simplified MAT	
Items	Statements	Mean	SD	Mean	SD	Mean	SD
AR1	The auditor is responsible for detecting all fraud.	3.55	1.90	3.30	1.89	3.83	1.91
AR2	The auditor is responsible for the soundness of the internal control system.	3.31	1.82	3.08	1.75	3.57	1.91
AR3	The auditor is responsible for maintaining accounting records.	2.58	1.65	2.40	1.51	2.78	1.80
AR4	The auditor is responsible for preparing the financial statements.	2.83	1.89	2.70	1.91	2.98	1.90
AR5	The auditor is responsible for preventing fraud.	4.33	1.96	3.98	2.01	4.72	1.88
AR6	The auditor is responsible for defining accounting policies and accounting estimates.	2.85	1.70	2.64	1.64	3.09	1.77

Financial statements reliability scale

Items	Statements	Total sample		Extended MAT		Simplified MAT	
		Mean	SD	Mean	SD	Mean	SD
FSR1	Users can have absolute assurance that the financial statements contain no material misstatements.	4.32	1.90	4.62	1.83	4.00	1.96
FSR2	The entity is free from fraud.	3.85	1.97	3.92	1.95	3.78	2.03
FSR 4	The audited financial statements contain no deliberate distortions.	4.72	1.66	4.78	1.65	4.65	1.72
FSR 5	The audited financial statements contain no accidental errors.	4.47	1.84	4.48	1.79	4.46	1.93
FSR 3	The audited financial statements comply with accepted accounting practice.	5.71	1.13	5.74	1.24	5.67	1.01
FSR7	The amounts and disclosures contained in the audited financial statements are credible.	5.63	1.08	5.60	1.23	5.65	0.924
FSR8	The audited financial statements give a true and fair view of the entity's financial position and performance.	5.52	1.30	5.46	1.42	5.59	1.19
FSR9	The "Intangible Assets - Players' Squad" account included in the audited financial statements is credible.	5.00	1.49	4.90	1.61	5.11	1.37
FSR6	The audited financial statements have no significant omissions.	5.05	1.50	5.02	1.56	5.09	1.47

Table 1: Background in audited financial reporting

Statement	Mean	SD
I read the Audit Report on an Entity's financial statements when I need to make economic decisions about it.	5.44	1.39
I consider myself a person familiar with the audit report on the financial statements.	5.23	1.32
I consider myself a person who fully understands the structure and content of the audit report on the financial statements.	5.11	1.40
I read an Entity's financial statements when I need to make economic decisions about it.	5.63	1.29
I believe that the auditing profession enjoys a good reputation in society.	5.01	1.55

Table 2: MANOVA output for auditor responsibility

Panel A: Multivariate tests[a]

Effect	Value	F	*df*	Error *df*	Sig.
Intercept Pillais Trace	0.899	131.952[b]	6.00	89.00	0.000
MAT Pillais Trace	0.053	0.828[b]	6.00	89.00	0.551

Panel B: Between-subjects effects

Source	Item	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected model	AR1	6.631[c]	1	6.631	1.838	0.178
	AR2	5.641[d]	1	5.641	1.694	0.196
	AR3	3.507[e]	1	3.507	1.279	0.261
	AR4	1.855[f]	1	1.855	0.511	0.477
	AR5	13.027[g]	1	13.027	3.437	0.067
	AR6	4.786[h]	1	4.786	1.647	0.203

[a] Design: intercept + MAT; [b] exact statistic; [c] R-Squared = 0.019; [d] R-Squared = 0.018; [e] R-Squared = 0.013; [f] R-Squared = 0.005; [g] R-Squared = 0.035; [h] R-Squared = 0.017

Table 3: MANOVA output for FSR_FAT1

Panel A: Multivariate tests[a]

Effect	Value	F	*df*	Error *df*	Sig.
Intercept Pillais Trace	0.905	215.525[b]	4.00	91.00	0.000
MAT Pillais Trace	0.038	0.900[b]	4.00	91.00	0.468

Panel B: Between-subjects effects

Source	Item	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected model	FSR1	9.210[c]	1	9.210	2.578	0.112
	FSR2	0.452[d]	1	0.452	0.114	0.736
	FSR4	0.391[e]	1	0.391	0.139	0.710
	FSR5	0.013[f]	1	0.013	0.004	0.951

[a] Design: intercept + MAT; [b] exact statistic; [c] R-Squared = 0.027; [d] R-Squared = 0.001; [e] R-Squared = 0.001; [f] R-Squared = 0.000

Table 4: MANOVA output for FSR_FAT2

Panel A: Multivariate tests[a]

Effect	Value	F	*df*	Error *df*	Sig.
Intercept Pillais Trace	0.970	733.929[b]	4.00	91.00	0.000
MAT Pillais Trace	0.015	0.339[b]	4.00	91.00	0.851

Panel B: Between-subjects effects

Source	Item	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected model	FSR3	0.105[c]	1	0.105	0.081	0.777
	FSR7	0.065[d]	1	0.065	0.055	0.816
	FSR8	0.386[e]	1	0.386	0.225	0.637
	FSR9	1.043[f]	1	1.043	0.465	0.497

[a] Design: intercept + MAT; [b] exact statistic; [c] R-Squared = 0.001; [d] R-Squared = 0.001; [e] R-Squared = 0.002; [f] R-Squared = 0.005

Table 5: Measurement model of the constructs

Construct	Item	Loading	Cronbach's alpha	Composite reliability	Average variance extracted	HTMT
AR			0.694	0.810	0.516	0.062 – 0.729
	AR2	0.722				
	AR3	0.677				
	AR5	0.760				
	AR6	0.710				
FSR_FAT1			0.855	0.881	0.652	0.046 – 0.729
	FSR1	0.922				
	FSR2	0.874				
	FSR4	0.729				
	FSR5	0.680				
FSR_FAT2			0.862	0.893	0.683	0.055 – 0.729
	FSR3	0.746				
	FSR7	0.935				
	FSR8	0.963				
	FSR9	0.611				

Table 6: Structural model assessment

Structural relations	Path coefficient	t statistics	*p* values	Significance ($p < 0.10$)	f^2
H1a: MAT -> AR	-0.405	1.664	0.096	Yes	0.043
H1b: MAT -> FSR_FAT1	0.243	0.771	0.441	No	0.015
H1c: MAT -> FSR_FAT2	-0.061	0.213	0.831	No	0.001
H2a: MAT*DMS -> AR	0.222	0.950	0.342	No	0.013
H2b: MAT*DMS -> FSR_FAT1	0.205	0.999	0.318	No	0.011
H2c: MAT*DMS -> FSR_FAT2	0.026	0.087	0.930	No	0.000

Table 7: MANOVA output for auditor responsibility – supplementary analysis

Panel A: Multivariate tests[a]

Effect	Value	F	*df*	Error *df*	Sig.
Intercept Pillais Trace	0.895	119.911[b]	6.00	84.00	0.000
MAT Pillais Trace	0.134	2.169[b]	6.00	84.00	0.054

Panel B: Between-subjects effects

Source	Item	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected model	AR1	23.950[c]	1	23.950	7.510	0.007
	AR2	7.267[d]	1	7.267	2.026	0.158
	AR3	1.173[e]	1	1.173	0.394	0.532
	AR4	2.884[f]	1	2.884	0.880	0.351
	AR5	17.334[g]	1	17.334	4.773	0.032
	AR6	12.919[h]	1	12.919	4.758	0.032

[a] Design: intercept + MAT; [b] exact statistic; [c] R-Squared = 0.078; [d] R-Squared = 0.022; [e] R-Squared = 0.004; [f] R-Squared = 0.010; [g] R-Squared = 0.051; [h] R-Squared = 0.051